

REMARKS

Claims 28-43 and 45-50 are pending in the present application.

The rejections of:

- (a) Claims 28-34, 36-40, 42, 45, 46, 48, and 50 under 35 U.S.C. §103(a) over Hochsmann (US 6,147,138) in view of Podszun (CA 2371181) and Beaman (US 5,352,405);
- (b) Claim 35 under 35 U.S.C. §103(a) over Hochsmann in view of Podszun and Beaman and further in view of Kar (US 2001/0002287);
- (c) Claim 41 under 35 U.S.C. §103(a) over Hochsmann in view of Podszun and Beaman and further in view of Melisaris (US 6,413,697) and Kawasaki (US 4,317,766);
- (d) Claims 43, 48, and 49 under 35 U.S.C. §103(a) over Hochsmann in view of Podszun and Beaman and further in view of Bredt (US 2001/0050031);
- (e) Claim 47 under 35 U.S.C. §103(a) over Hochsmann in view of Podszun and Beaman and further in view of Melisaris-2 (US 6,177,232),

are respectfully traversed.

The claimed invention is represented by independent Claim 28, which provides:

- A process for producing a three-dimensional object comprising
  - a) providing a layer of a pulverulent substrate comprises a polymer
  - b) controlling the temperature of a manufacturing chamber by supplying heat to said layer to bring said layer to an elevated temperature or to maintain said layer at an elevated temperature below the melting or sintering temperature of the polymer in said pulverulent substrate
  - c) selectively applying an absorber in a suspension or a liquid absorber via an inkjet process to a region to be sintered
  - d) applying other specific liquids or suspensions with certain properties

- e) selectively melting regions of the layer of the pulverulent substrate by introducing electromagnetic energy via a laser of wavelength from 100 to 3000 nm
- f) cooling the molten and non-molten regions to a temperature which allows the moldings to be removed intact
- g) removing the moldings.

In the Office Action mailed December 23, 2010, the Examiner alleges that the claimed invention is obvious over the combined disclosures of Hochsmann, Podszun and Beaman. The Examiner's position is that Hochsmann disclose all the limitations, either explicitly or implicitly, of the claims but for the material modifier, the wavelength of the radiation source, the use of a laser, and the heating step (b). With respect to the first three deficiencies, the Examiner cites Podszun. However, the Examiner acknowledges that Podszun fails to disclose the heating step (b). The Examiner refers to Beaman for this heating step.

Applicants disagree with the Examiner's alleged obviousness rejection and submit that this rejection is premised upon a mistaken understanding of the process of Hochsmann.

Hochsmann disclose a selective laser sintering method. As a disadvantage, Hochsmann states that a relatively large amounts of binder material must be supplied (column, 1, lines 55-58). As a result, the binder material would then result in considerable disadvantages in the finished component (column, 1, lines 66-67). Indeed, inclusion of the large amounts of binder material would develop in the finished model, thus contaminating and possibly weakening the finished component. Hochsmann overcame this problem by:

- 1) coating all particles with a binder (Claim 1 (a));
- 2) using a three-component system by including a "moderating agent";
- 3) using the binder for consolidating the particles; and
- 4) only the binder reacts or is melted / liquefied (column 2, lines 26-30 and column 4, lines 40-44).

The process of Hochsmann is quite distinct from the claimed invention which utilizes a two-component system. More importantly, in Hochsmann only the binder reacts or is melted / liquefied. In Hochsmann, the particles are not melted. However, in the claimed invention it is specifically required that the particles are melted (see (e)). Thus, Hochsmann actually teaches away from the invention as claimed. The Examiner is reminded that “a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) (see MPEP §2141.02).

Podszun has already been discussed in detail in the previous responses. Podszun disclose a process that does not provide any selectively applied absorber. Further, input of energy over a surface, with the effect of selective melting, is not described in Podszun. In this method, the laser must continue to be guided selectively over the zone to be melted. Complex optics and more time is needed for this purpose. Thus, an unexpected effect of the present invention, vis-à-vis Podszun, is that selectivity can be achieved merely by printing an absorber instead of via selective focused application by means of a laser (meaning that focusing of the laser is not necessary). Thus, the claimed invention makes the forming of three-dimensional articles faster and less expensive as complex optics for focusing are not necessary. Beaman suffers similar defects as Podszun and does not compensate for the aforementioned deficiencies in the disclosure of Hochsmann.

Moreover, none of Kar, Melisaris, Kawasaki, Brecht, or Melisaris-2 cure this basic deficiencies in the combined disclosures of Hochsmann, Podszun and Beaman. Therefore, even when Hochsmann, Podszun and Beaman are viewed together with Kar, Melisaris, Kawasaki, Brecht, and/or Melisaris-2, the claimed invention would still not be obvious.

Withdrawal of these grounds of rejection is requested.

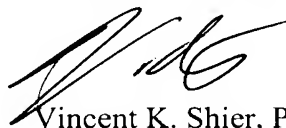
Finally, Applicants respectfully request that the provisional obviousness-type double patenting rejections of Claims 28-30, 36-43, and 45-50 over Claims 28-29 and 35-49 of co-pending U.S. 11/587,758 be held in abeyance until an indication of allowable subject matter in the present application. If necessary, a terminal disclaimer will be filed at that time. Until such a time, Applicants make no statement with respect to the propriety of this ground of rejection.

However, the Examiner is reminded that MPEP §804 indicates that: "If "provisional" ODP rejections in two applications are the only rejections remaining in those applications, the examiner should withdraw the ODP rejection in the earlier filed application thereby permitting that application to issue without need of a terminal disclaimer."

Applicants submit that the present application is now in condition for allowance.  
Early notification of such action is earnestly solicited.

Respectfully submitted,

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